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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,734	04/09/2004	Yasuo Sakurai	251495US2	9017

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EXAMINER	
DAHBOUR, HENRY	

ART UNIT	PAPER NUMBER
2625	

NOTIFICATION DATE	DELIVERY MODE
04/18/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/820,734	SAKURAI ET AL.	
	Examiner	Art Unit	
	HENRY DAHBOUR	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *26 and 27* is/are allowed.

6)☒ Claim(s) *1-3,5-13,15-18,21,23 and 24* is/are rejected.

7)☒ Claim(s) *4,14,19,20,22,25 and 28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 April 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/19/07, 8/24/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figures 18-22 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-2, 5, 7-9, 11-13, 15-18, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tabata (U.S.5581076) in view of the admitted prior art.

Regarding claim 1, Tabata discloses an illumination device which is used in a document-reading device configured to irradiate light over at least a predetermined illumination width including a reading area having a predetermined reading width extending in a main scanning direction of a document and to read the light reflected from the document using an image-reading element, comprising a point light source (see 1, 2 in Figure 2), a light-guiding member having an incident surface opposed to a light-emitting surface of the point light source and a light-emitting surface opposed to the reading area (see 3 in Figure 2).

Tabata does not disclose an illumination area generated by the light irradiated from the point light source having a high illuminance distribution range of a *substantially* constant illuminance, and the high illuminance distribution range coincides *substantially* with the reading area.

Applicant's Figure 22 discloses these features (see 12 & 19 in Figure 22).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine these features with the device of Tabata.

The suggestion/motivation for doing so is because Applicant's specification teaches that these features are known in the art (see "Description of the Related Art… Fig.18…Fig.19…Fig.20…Fig.21…Fig.22" in pages 1-5 in Applicant's specification).

Also, Tabata and the admitted prior art, are analogous art because they are from the same field of endeavor, that is the art of imaging devices.

Thus, it would have been obvious to combine Tabata and the admitted prior art, to obtain the invention specified in claim(s) 1.

Regarding claim 2, Tabata discloses a plurality of the point light source that are arranged in the main scanning direction (see "array" in line 23 in column 3).

Regarding claim 5, Tabata discloses a light-shielding member configured to shield a surface of the document located above the light-guiding member from the light emitted from the light-emitting surface of the light-guiding member (see top of 10 in Figure 2).

Regarding claim 7, Tabata discloses the light-guiding member comprises a cylindrical lens (see 3 in Figure 2).

Regarding claim 8, Tabata discloses a position of a focal line opposed to the incident surface of the cylindrical lens coincides substantially with a center portion in a sub-scanning direction of the point light source (see Figure 2).

Regarding claim 9, Tabata discloses the cylindrical lens is located at a position relative to a cross section taken along in the sub-scanning direction such that the point light source and a center of the reading area are in a conjugate relationship having a predetermined image forming magnification (see Figure 2).

Regarding claim 11, Tabata discloses a plurality of the light source that are arranged in the sub-scanning direction (see "array" in line 23 in column 3).

Regarding claim 12, Tabata discloses the point light source is a light-emitting diode (see “LED” in line 23 in column 3).

Regarding claim 13, Tabata discloses the predetermined reading width corresponds to a width in the sub-scanning direction (see Figure 2) over which the image reading element receives the light (see 9 in Figure 2).

Regarding claim 15, Tabata discloses the image-reading element is a charge-coupled device (see 9 in Figure 2).

Regarding claim 16, Tabata discloses the image-reading element is a photodiode array (see 9 in Figure 2).

Regarding claims 17 & 21, see rejection of claim 1.

Regarding claim 18, the admitted prior art further discloses compatibly used for both a fixed document reading scheme and a document transfer reading scheme (Fig.22).

4. Claims 6, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tabata (U.S.5581076) in view of the admitted prior art and Sato et al (U.S.6661545).

Regarding claim 6, Tabata does not disclose an opposing reflector located at a position opposed to the light-emitting surface of the light-guiding member and beyond the reading area.

Sato discloses this feature (see 102 in Figure 29).

Tabata and Sato are analogous art because they are from the same field of endeavor, that is the art of imaging devices.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the feature of Sato, with the device of Tabata.

The suggestion/motivation for doing so is because Sato teaches that it would "improve the illumination efficiency" (see lines 23-24 in column 1).

Therefore, it would have been obvious to combine Tabata with Sato to obtain the invention specified in claim(s) 6.

Regarding claim 10, Tabata does not disclose a surface except for the light-emitting and incident surfaces of the light-guiding member is configured to reflect light.

Sato discloses this feature (see 102 in Figure 29).

Tabata and Sato are analogous art because they are from the same field of endeavor, that is the art of imaging devices.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the feature of Sato with the device of Tabata.

The suggestion/motivation for doing so is because Sato teaches that it would "improve the illumination efficiency" (see lines 23-24 in column 1).

Therefore, it would have been obvious to combine Tabata with Sato to obtain the invention specified in claim(s) 10.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tabata (U.S.5581076) in view of the admitted prior art and Yamana et al (U.S.5696607).

Regarding claim 3, Tabata does not disclose a reflector configured to surround a region over which the light emitted from the point light source is irradiated between the point light source and the incident surface of the light-guiding member.

Yamana discloses this feature (see 41 in Figure 4).

Tabata and Yamana are analogous art because they are from the same field of endeavor, that is the art of imaging devices.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the feature of Yamada with the device of Tabata.

The suggestion/motivation for doing so would have been to provide improved illumination efficiency.

Therefore, it would have been obvious to combine Tabata with Yamana to obtain the invention specified in claim(s) 3.

6. Claims 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tabata (U.S.5581076) in view of the admitted prior art and Itoh et al (U.S.4559564).

Regarding claims 23-24, Tabata does not disclose a region over which the light emitted from the point light source is irradiated between the point light source and the incident surface of the light-guiding member is surrounded by a reflector having a parabolic cross section taken along a sub-scanning direction, and the reflector has a focal point at the point light source, and at least a part of the light that has reached the reflector is emitted toward the document from between the light-guiding member and the reflector.

Itoh discloses these features (see Figure 2).

Tabata and Itoh are analogous art because they are from the same field of endeavor, that is the art of imaging devices.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the features of Itoh with the device of Tabata.

The suggestion/motivation for doing so would have been to provide improved illumination efficiency.

Therefore, it would have been obvious to combine Tabata with Itoh to obtain the invention specified in claim(s) 23-24.

Allowable Subject Matter

7. Claims 4, 14, 19, 20, 22, 25, 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The features identified, in combination with other claim limitations, are neither suggested nor discussed by the prior art of record:

Regarding claim 4, the prior art, either singularly or in combination, does not teach or suggest a device, as claimed in claim 1, comprising:

"…wherein an illuminance distribution of the illumination area has a full width at half maximum of not more than three times the predetermined illumination width".

Regarding claim 14, the prior art, either singularly or in combination, does not teach or suggest a device, as claimed in claim 1, comprising:

"…the predetermined illumination width is equivalent to a width corresponding to a variation due to a manufacture tolerance of parts of the illumination device added to a width corresponding to a width in the sub-scanning direction over which the image reading element receives the light".

Regarding claim 19, the prior art, either singularly or in combination, does not teach or suggest a device, as claimed in claim 17, comprising:

"…wherein the document reading device is of a monochrome document reading device and the substantially constant illuminance has a flatness of not more than 30%".

Regarding claim 20, the prior art, either singularly or in combination, does not teach or suggest a device, as claimed in claim 17, comprising:

"…wherein the document reading device is of a color document reading device and the substantially constant illuminance has a flatness of not more than 12%".

Regarding claim 22, the prior art, either singularly or in combination, does not teach or suggest a device, as claimed in claim 1, comprising:

"…the light-guiding member includes a pair of a convex cylindrical lens having the incident surface and a concave cylindrical lens having the light-emitting surface, a

center of the point light source in a sub-scanning direction is located on a composite focal line of the light-guiding member, and a region over which the light emitted from the point light source is irradiated between the point light source and the incident surface of the light-guiding member is surrounded by a reflector".

Regarding claim 25, the prior art, either singularly or in combination, does not teach or suggest a device, as claimed in claims 1 & 23, comprising:

"…the light-guiding member comprises a cylindrical lens, a position of a focal line opposed to the incident surface of the cylindrical lens coincides substantially with a center portion in a sub-scanning direction of the point light source, the cylindrical lens is of a compound lens having a convex cylindrical lens unit with a convex surface facing the point light source and a plane portion, a symmetry axis of the reflector is configured to coincide with an optical axis of the cylindrical lens, and light that has reached the reflector is directed toward the document via the plane portion of the cylindrical lens".

Regarding claim 28, the prior art, either singularly or in combination, does not teach or suggest a device, as claimed in claim 1, comprising:

"…wherein an illuminance distribution of the illumination area has a full width at half maximum of not more than two times the predetermined illumination width".

8. Claims 26-27 are allowed.

The following is an examiner's statement of reasons for allowance. The features identified, in combination with other claim limitations, are neither suggested nor discussed by the prior art of record:

Regarding claim 26, the prior art, either singularly or in combination, does not teach or suggest a device comprising:

"…a first carriage configured to shift an illumination area in a sub-scanning direction, and a support base configured to support and hold the point light source and the light-guiding member together as a unit, and to be attached to the first carriage adjustably in the sub-scanning direction".

Regarding claim 27, the prior art, either singularly or in combination, does not teach or suggest a device comprising:

"…a first carriage configured to shift an illumination area in a sub-scanning direction, and a support base configured to support and hold the point light source and the light-guiding member together as a unit, and to be attached to the first carriage adjustably in the sub-scanning direction".

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hattori, Yushiya, Sawada, Tanimizu, Itoh et al ('015), Tseng and Fang et al are cited to show imaging devices.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HENRY DAHBOUR whose telephone number is (571)272-4295. The examiner can normally be reached on 9:00AM-5:30PM, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on 571-272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HD

/Mark K Zimmerman/
Supervisory Patent Examiner, Art Unit 2625